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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,930	10/22/2003	W. Daniel Hillis	APPL0001C	1609

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GLENN PATENT GROUP  
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EXAMINER
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RAMAKRISHNAIAH, MELUR

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/691,930

Applicant(s)

HILLIS ET AL.

Examiner

Melur Ramakrishnaiah

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### ***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-7 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-50 of U.S. Patent No.6,724,417

B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because for example claim 1 of the present application is an obvious variation of claim 1 of U.S. Patent No.6,724,417 B1.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2643

2. Claim 1 is rejected under 35 U.S.C 102(e) as being anticipated by Fong et al. (US PAT: 6,208,373, hereinafter Fong).

Regarding claim 1, Fong discloses an apparatus for presenting a composite image conveying eye contact with a conference participant, comprising: a composite image generator (301, fig. 3) communicatively coupled with at least two members of an imaging device collection (for example a-b, c-d, fig. 3), for respectively receiving an image from each image device in the collection at approximately a same time to provide a synchronized image based on observations of the participants by at least two members of the imaging device collection, wherein the composite image generator is communicatively coupled to a motion video portal in (301, fig. 3) for providing a succession of the composite images based upon at least the synchronized image collection for presentation to a video delivery system (303, fig. 3), wherein video delivery system presents a second participant with a motion video stream based upon the composite image succession (figs. 2-3, col. 6 lines 62-67, col. 7, line 1 – col. 8, line 55).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2643

4. Claims 2 –7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fong in view of Shashua et al. (US PAT: 6,219,444, filed 2-2-1998, hereinafter Shashua).

Regarding claim 2, Fong discloses an apparatus that conveys eye contact with a conference participant, comprising: means (301, fig. 3) for generating composite image of the participant receiving at least two images of the participant, wherein each image is comprised of two-dimensional array of pixels, means for generating composite image (col. 2 lines 61-67, col. 8 lines 34-55).

Fong differs from claimed invention in that although he teaches generating eye contact image by receiving images from multiple cameras and using field graph to create an image which provides eye contact between the conference participants (col. 7 lines 52-66, col. 8 lines 47-51); he does not teach the following: means for calculating at least one dense correspondence to determine a displacement in at least a first dimension for each of the pixels in at least one of the first images, and means for generating an interpolated image based upon the at least one dense correspondence for each of the at least two images.

However, Shashua discloses synthesizing virtual two dimensional images of three dimensional space from a collection of two dimensional images which teaches the following: means for calculating at least one dense correspondence to determine a displacement in at least a first dimension for each of the pixels in at least one of the first images, and means for generating an interpolated image based upon the at least one dense correspondence for each of the at least two images (fig. 2A col. 5 lines 14-38).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Fong's system to provide for the following: means for calculating at least one dense correspondence to determine a displacement in at least a first dimension for each of the pixels in at least one of the first images, and means for generating an interpolated image based upon the at least one dense correspondence for each of the at least two images as this arrangement would provide one way, among many possible ways, of processing image to obtain eye contact of the participants in video conference.

Regarding claims 4-6, Fong implicitly teaches the following: means for displacing each of the pixels in the image pixel arrays by a partial displacement in at least in a first dimension, means (302, fig. 3) for combining corresponding pixels in the at least a second dimension to create the composite image pixel, wherein some of the partial displacements of the images is approximately equal to the displacement, means (302, fig. 3) for applying a rectifying transformation to the image (col. 8 lines 47-55).

Regarding claims 3 and 7, Fong does not teach the following: means for combining at least two of the interpolated images by using an averaging scheme to create the composite image, means for wrapping the image by the partial displacement to modify the image.

However, Shashua teaches the following: means for combining at least two of the interpolated images by using an averaging scheme to create the composite image, means for wrapping the image by the partial displacement to modify the image (col. 5 lines 56-62).


Art Unit: 2643

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Fong's system to provide for the following: means for combining at least two of the interpolated images by using an averaging scheme to create the composite image, means for wrapping the image by the partial displacement to modify the image as this arrangement would facilitate necessary processing to obtain the desired image as taught by Shashua.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melur Ramakrishnaiah whose telephone number is (571)272-8098. The examiner can normally be reached on 9 Hr schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curt Kuntz can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Melur Ramakrishnaiah  
Primary Examiner  
Art Unit 2643